

REMARKS

Claims 1-18 are currently pending. Claims 13-18 have been added to round out the scope of protection being sought and to take a slightly different approach at claiming the invention.

The Office Action of January 15, 2003 includes a rejection of claims 1 and 5 under 35 U.S.C. §103 as allegedly being unpatentable over applicant's description of prior art as shown in Figure 1; and a rejection of claims 1-8 under 35 U.S.C. §103 as allegedly being unpatentable over the Sun patent (U.S. Patent No. 6,307,452). These rejections are respectfully traversed.

It is noted initially that the rejection identifies the flexures 3 of prior art Figure 1 as meeting both the "flexure elements" and "repulsive elements" of claims 1 and 5. A single element of the prior art cannot be properly used twice to meet two separate recitations of a claim. To establish a *prima facie* case of obviousness, all of the claim limitations must be taught or suggested in the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 560 (CCPA 1974).

In this instance, the Office suggests that the rejection is based on the concept that the present invention merely involves an integration of a flexure element and a repulsive element as a single piece. The problem is, of course, that the MEMS, and in particular the flexures 3, of prior art Figure 1 do not disclose a repulsive element, let alone one that could be integrated with the flexures 3.

With respect to both prior art Figure 1 and the Sun patent, apparently the Office is relying on the idea that the flexure element has a repulsive force. However, a repulsive

force of a flexure element is not the same as the recited repulsive elements of claim 1, for instance. Claim 1 actually recites "repulsive elements for increasing the repulsive force of flexure elements" Hence, one cannot argue that the flexure element with its repulsive force also has repulsive elements for increasing that repulsive force. The reasoning is circular and the rejection should be withdrawn for at least this reason.

Also with respect to both prior art Figure 1 and the Sun patent, the Office Action also suggests that the recitation at the end of original claim 1 regarding the repulsive elements increasing the repulsive force of the flexure elements "when the flexure elements supporting the moveable element are resiliently deformed by a predetermined amount during movement of the moveable element" is being disregarded. The Office explains that the physical structure of the device is being examined "and not the process of use." Applicant respectfully submits that the recitations of claim 1 should not be viewed as a process of use. This phrase is a positive recitation of the physical structure of the repulsive elements. This is eminently apparent insofar as neither prior art Figure 1 nor the Sun patent have repulsive elements for increasing the repulsive force of the flexure elements when the flexure elements supporting the moveable element are resiliently deformed by a predetermined amount during movement of the moveable element, regardless of how the devices are used.

This aspect of claim 1 is achieved in the present invention by the repulsive elements being in the form of, for instance, stoppers, such as stopper 60 shown in Figure 6. This stopper, which is on the flexure element 40, engages with the substrate when the flexure elements are resiliently deformed by a predetermined amount as shown in Figure 7. This

changes the span of the flexure element, which increases the repulsive force of the flexure elements, but still allows the moveable element 30 to continue to move. (See, e.g., new claims 13-18.)

Prior art Figure 1 has no repulsive elements and therefore is not relevant. The Sun patent, as discussed in great detail in the Amendment of October 31, 2002, has the moveable element 34 engage the post 32 before the flexure elements engage landing bumpers 26. Therefore, the moveable element in the form of the shorting bar 34 formed on the microplatform 20 is stopped and no longer moving when the bumpers 26 are engaged. Therefore, the Sun patent cannot operate as recited in claim 1.

This illustrates two points. First, the recitation of the repulsive elements being for increasing the repulsive force of flexure elements when the flexure elements supporting the moveable element are resiliently deformed by a predetermined amount during movement of the moveable element is a positive recitation of the claims, and not a statement of use. Second, it is apparent that this aspect of the present invention is neither anticipated nor rendered obvious insofar as the Sun patent has for its purpose, as stated in column 4, lines 14-17 of the Sun patent, the use of the landing bumpers 26 to prevent the microplatform 22 from directly impacting against the bottom electrode 14, and, as apparently met by column 5, beginning at line 13, has the effect on deforming the microplatform 22 so that it remains flat when the plane is touching the underlying contact post 34. This second characteristic of the Sun device would not be met. When the function of a prior art reference would be destroyed by the suggested modification, a *prima facie* case of obviousness cannot be established. *In re Gordon*, 733 F.2d 900 221 U.S.P.Q. 1125 (Fed. Cir. 1984).

Also, with respect to claim 4, it is noted that the Office suggests that the Sun patent includes resilient members "formed on middle portions of the flexure elements" at page 6 of the Office Action. The bumpers 26 are clearly shown as not being on the microplatform 20, 22. Therefore, the recitations of claim 4 are not met, nor is there any allegation it would be obvious to modify the Sun patent to meet these recitations of claim 4.

The Office Action also includes a new grounds of rejection of claims 1 and 9 under 35 U.S.C. §103 as allegedly being unpatentable over the Wang patent publication (US 2002/0145493 A1).¹ This rejection is also respectfully traversed.

In this regard, the Office points to the same elements as meeting both the flexure elements and the repulsive elements, i.e., the flat-springs 4. The basis of this rejection, therefore, has been addressed with respect to Figure 1, above.

Also, the Office suggests that the recitation in claim 1 of the repulsive elements being for increasing the repulsive force of the flexure elements when the flexure elements supporting the moveable element are resiliently deformed by a predetermined amount during movement of the moveable element. This grounds of rejection has also been treated by the above.

Finally, with respect to electrode connectors 28 being identified with respect to claim 9 as being a moveable element which moves in a direction parallel to the plane of the substrate, it is noted that they do not apparently move at all relative to the substrate. See

¹ The preamble of the rejection indicates claims 1 and 10, but the body of the rejection refers to claim 9. Also, claims 10, 11 and 12 were indicated to contain allowable subject matter. Therefore, it is assumed that the rejection was to be directed to claims 1 and 9.

paragraph no. 0026 and paragraph no. 0032, for instance of the Wang patent. In any event, the Wang patent publication does not include repulsive elements as explained above.

It is also noted that the Wang patent is not likely prior art. Applicant reserves the right to present a certified translation of the priority application to remove the Wang patent as a reference, which might be done as a matter of convenience if the above arguments are not deemed persuasive.

In light of the foregoing, Applicant respectfully requests reconsideration and allowance of the above-captioned application. Should any residual issues exist, the Examiner is invited to contact the undersigned at the number listed below.

Respectfully submitted,

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